C. W. DAVIS AND F. R. SUNDERLIN.

INSULATED VITREOUS RECEPTACLE.

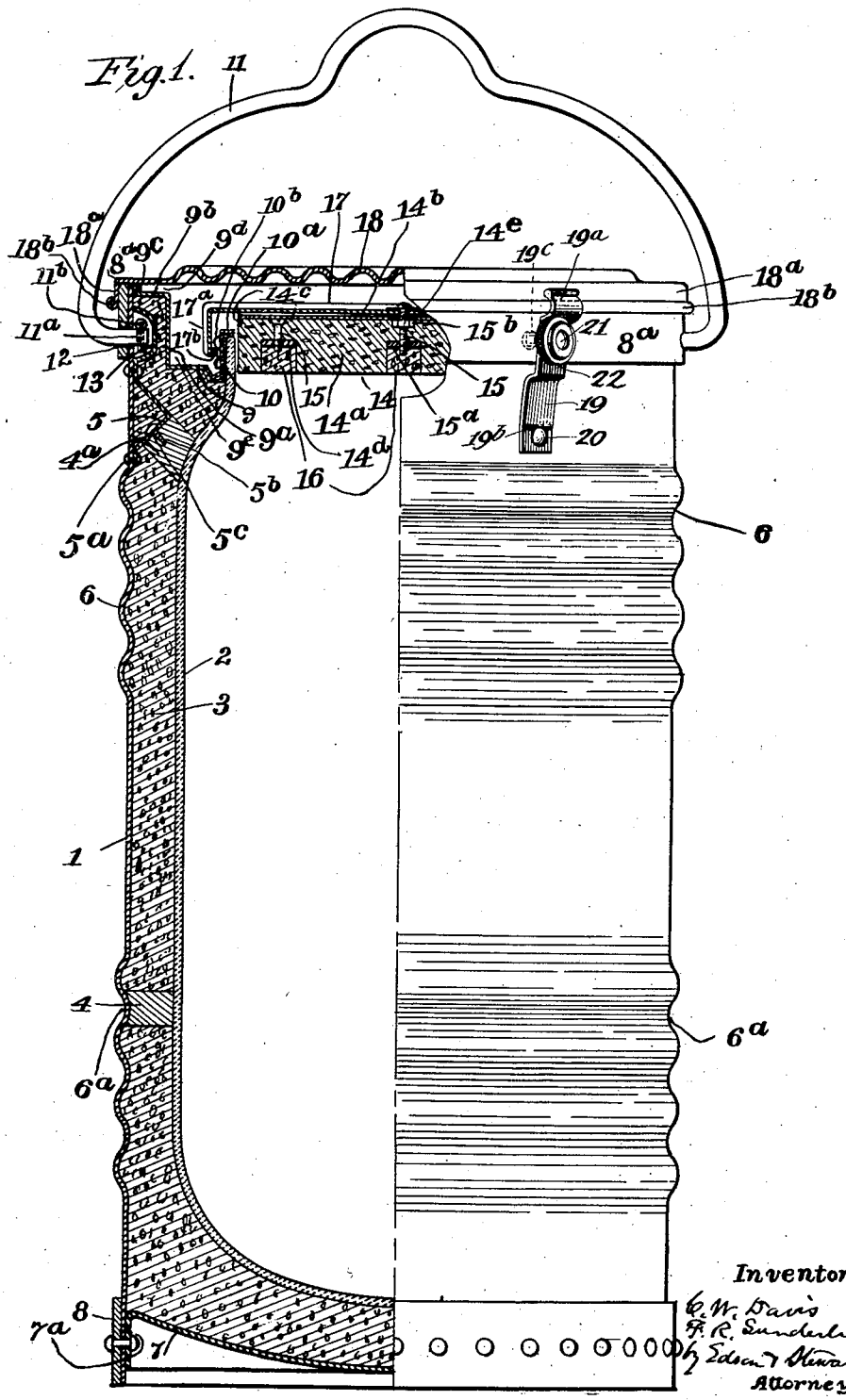
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1,333,840.

Patented Mar. 16, 1920.

3 SHEETS—SHEET 1.

Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 2.

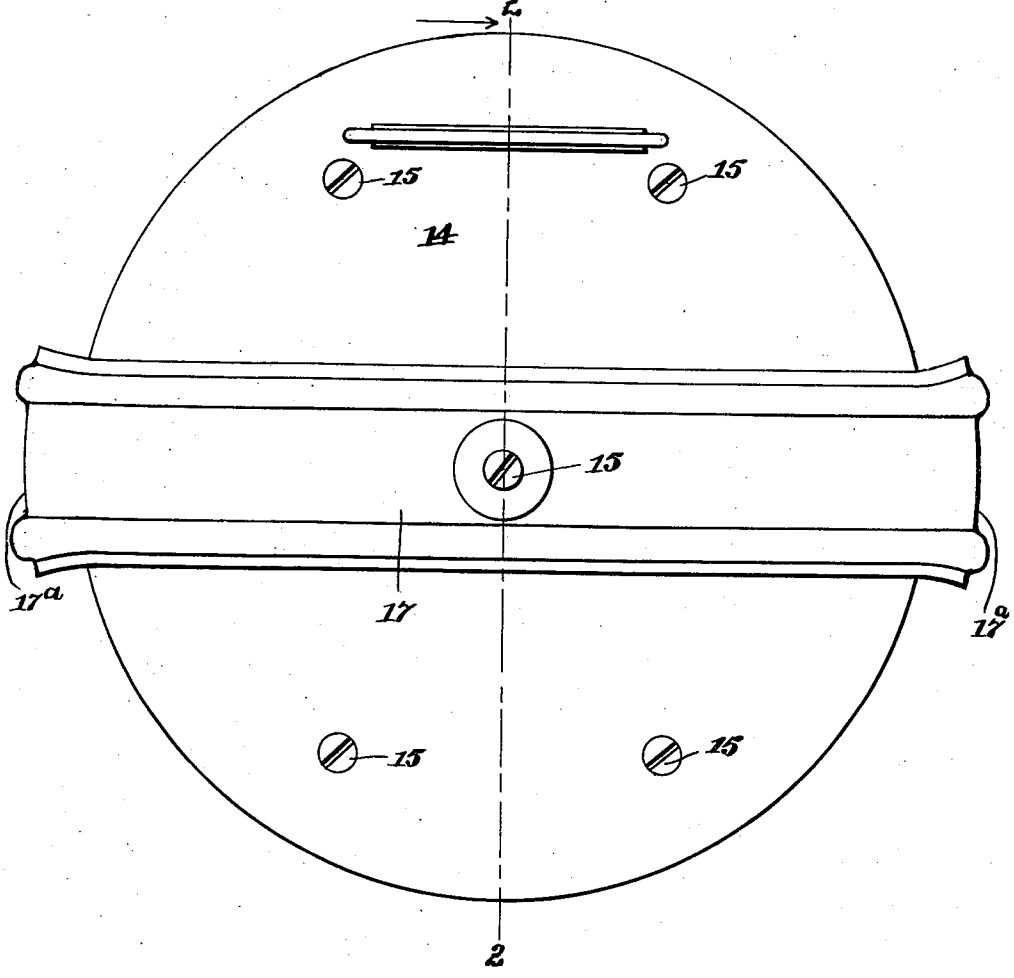
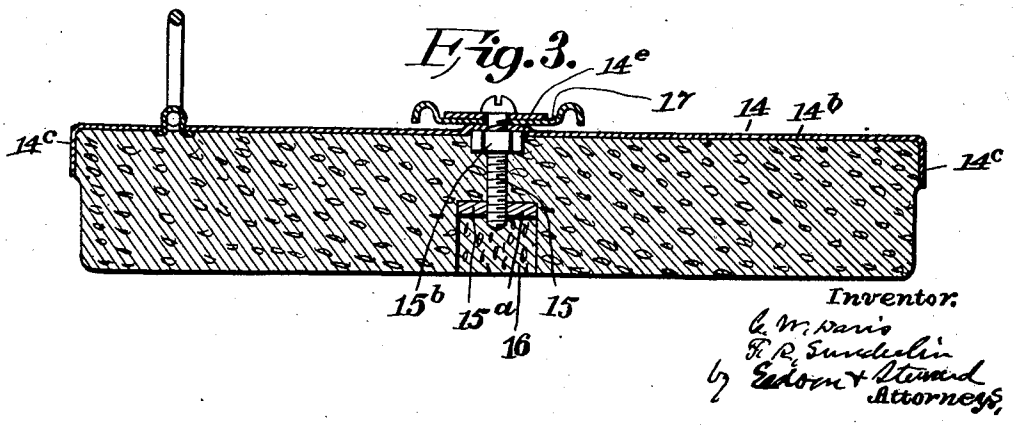


Fig. 3.



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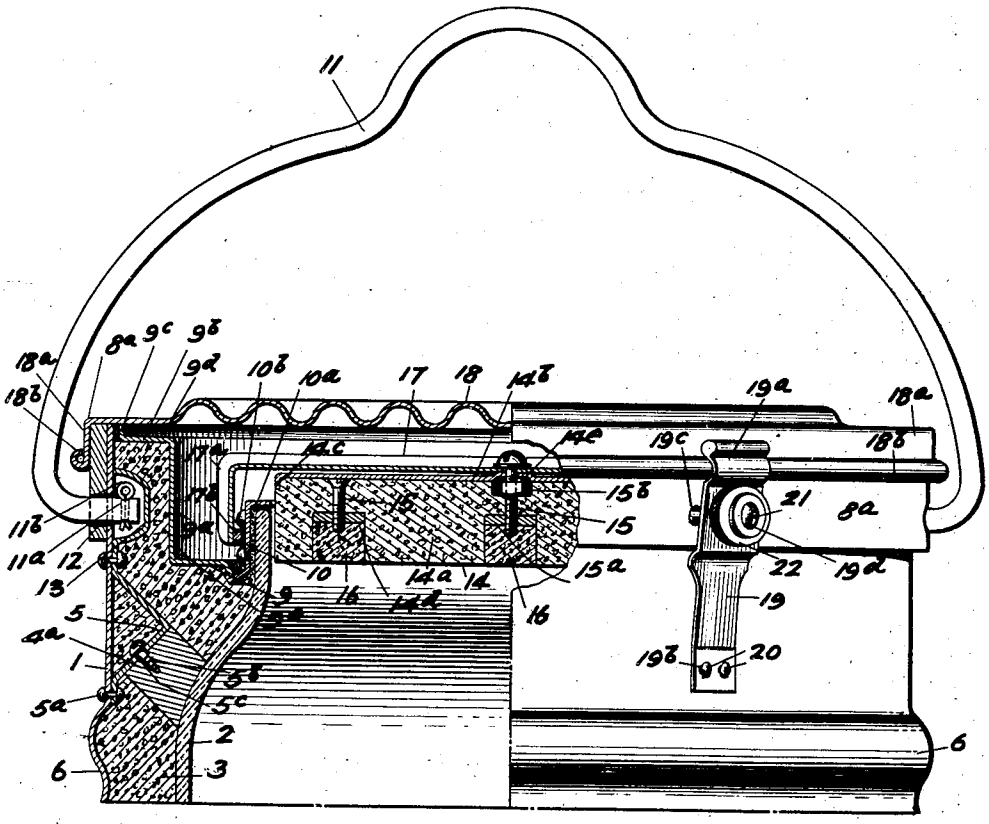
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3 SHEETS—SHEET 3.

Fig. 4.



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UNITED STATES PATENT OFFICE.

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INSULATED VITREOUS RECEPTACLE.

1,333,840. Specification of Letters Patent. Patented Mar. 16, 1920.

Application filed October 21, 1918. Serial No. 259,153.

To all whom it may concern:

Be it known that we, CORTLAND W. DAVIS and FRANK R. SUNDERLIN, citizens of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Insulated Vitreous Receptacles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

Our invention relates to insulated vitreous receptacles, objects thereof being to render such receptacles immune, as far as possible, from external thermal influences, and also to shield them from blows and shocks which are incident to transportation and use.

Referring to the drawings—

Figure 1 shows a vertical section of the receptacle, portions thereof being shown in elevation.

Fig. 2 is a plan view of a cover for the vitreous portion of the receptacle.

Fig. 3 is a section taken on the line 2—2 of Fig. 2.

Fig. 4 is a large detailed section of an upper portion of the receptacle.

1 is a non-vitreous protective jacket, preferably made of sheet metal, rolled and bent into cylindrical form, the edges of the sheet being overlapped, riveted and soldered together in the usual manner.

2 is a vitreous container, between which and the protective jacket is a space for the reception of a non-heat conducting filling, 3, which is preferably granulated cork, although it may be composed of any suitable heat insulating material. The exterior surface of the container is preferably silvered.

Separation of the jacket 1 and container 2 is maintained by braces, 4, 4^a, the braces 4^a being set diagonally, as shown, to assist in taking the end thrust of the container. It will be understood that the filling of material is tightly packed in the space between the jacket and the container, so as to prevent relative motions of the parts.

5 is a seat for a brace 4^a, secured to the inner wall of the jacket 1 by rivets 5^a. Screws 5^b extending through a hole 5^c in the seat 5 and into the brace 4^a, secure said brace in fixed relation to said jacket.

The wall of the jacket 1 is provided with upper corrugations 6, and lower corrugations 6^a which, in a great measure, prevent the filling 3 from moving longitudinally in the annular space between the jacket 1 and the container 2.

The jacket 1 is provided with a bottom 7 having a downwardly extending flange 7^a, riveted and hermetically sealed to the lower edge of the jacket 1 which constitutes a support for the receptacle.

A reinforcing ring 8 encircles the lower end of the jacket 1.

9 is an annular yielding shock insulating diaphragm, preferably made of copper, soldered at its upper end to the inner wall of the jacket 1. The container 2 is provided with a collar 10, secured thereto by a suitable bonding agent and preferably made of any non-corrosive metal, such as brass. This collar has an inturned flange 10^a which rests on the top edge of the container 2. This collar 10 is also provided with an outwardly extending sloping flange 10^b, forming a groove for solder and overlapped by the inner edge of the diaphragm 9, the diaphragm and the collar being soldered together at their overlapping parts.

The shock insulating diaphragm 9 is provided with a cylindrical body portion 9^a, and an outwardly extending flange 9^b, having a turned-up edge 9^c which extends to the top of the jacket 1. The objects of the edge 9^c is to provide a large contact surface for the solder, and to leave a space 9^d through which shocks administered from the outside will not be transmitted to the main body of the diaphragm 9 and to other parts of the construction. It will be observed that the general shape of the diaphragm 9 is such as to provide a depression 9^e which extends entirely around the neck of the vitreous container to prevent externally administered shocks from reaching said neck. The use of copper in the construction of the diaphragm 9 adds further security to the vitreous container, it having been found that soft metal, such as copper, will yield without transmitting shocks. Copper is, furthermore, useful in this relation inasmuch as it

is only slightly corrodible and is easy to keep clean.

The device is provided with a bail 11, the inturned ends of which oscillate in holes 12 in the body of the jacket 1, said inturned ends being provided inside said jacket with perforations 11^a, through which extend cotter pins 11^b. Cups 13 soldered to the inner wall of the jacket 1 inclose the inwardly protruding ends of the bail.

The container 2 is provided with a cover 14, consisting in the main of a circular body of cork 14^a adapted to fit within and tightly close the neck of the container 2. 14^b is a protective cap covering the entire upper surface of the cover 14^a and extending downward around the margin of said cover to form a flange 14^c. The cap is secured in position on the cover by bolts 15 having nuts 15^a resting in depressions 14^d of the cover, these depressions being filled with cork plugs 16. While we prefer cork as the material for the cover, it will be understood that other substances which are poor conductors of heat may be used instead of cork. The flange 14^c may be of such size as to constitute a shoulder for the cover 14, whereby said cover may bear upon the top edge of the neck of the container, or upon the inwardly turned flange 10^a of the collar 10.

The cover 14 is provided with a swiveled cross bar 17 having downwardly turned ends 17^a which are provided with inwardly extending tapering lugs 17^b, which may be formed by bending inward a portion of the metal.

The collar 10 is provided with a series of outstanding rivets 10^c extending through and riveted inside said collar. These rivets are positioned to engage the tapered lugs 17^b of the cross bar 17. to thereby lock the cover 14 in position on the container 2. The cross bar 17 is swiveled on one of the bolts 15 which carries on a screw threaded portion thereof a nut 15^b spaced sufficiently far from the head of the bolt to allow the cross bar to turn freely on said bolt as a pivot. The cap 14^b has a raised center 14^e which prevents the cross bar from rubbing upon the cap during its oscillations.

Should the container 2 become broken, it may be removed from its position within the jacket 1 by cutting the rivets which secure the bottom 7 in position and melting out the solder at the joints and then removing the bottom 7 and the filling 3. The filling having been removed, the solder at the lap joint of the collar and the annulus 10 and 9 will be melted, so as to free the container and allow it to be withdrawn through the open bottom of the jacket 1 and a new container inserted in lieu thereof.

The jacket 1 is encircled by a protecting ring 8^a secured thereto by rivets.

The entire receptacle is closed by a cover 18 having a flange 18^a fitting snugly over the reinforcing ring 8^a. The edge of this flange 18^a is provided with a bead 18^b with which a pivoted clamp 19 is adapted to engage, this clamp 19 being provided with a groove 19^a adapted to fit said bead 18^b. The pivot of the clamp 19 is formed by rivets 20 fixed in the jacket 1 and loosely fitting openings 19^b in the lower end of the clamp. A headed bolt 21 fixedly secured in the reinforcing ring 8^a, threaded at its outer end and extending through an aperture 19^c, is engaged by a thumb nut 22, by means of which said clamp 19 may be forced into engagement with the bead 18^b. The thumb nut has a depression 19^d in which the head of the retaining bolt 21 moves. Several of these clamps 19 may be employed, as desired.

Having thus described our invention, what we claim as new and desire to secure by Letters Patent is:

1. An insulated receptacle, including an outer jacket, an inner vitreous container, a brace, and a seat for said brace associated with and additional to said jacket.

2. An insulated receptacle, including an outer jacket, an inner vitreous container, a brace, and a seat for said brace associated with said jacket, the seat and brace having a diagonal disposition.

3. An insulated receptacle, including an outer jacket, an inner container, a brace extending to the inner container, and a seat for said brace associated with the outer jacket, said brace and said seat being united by a screw extending through a hole in the seat and into the brace.

4. An insulated receptacle, including an outer jacket, an inner container, and a brace extending therebetween, the outer jacket being corrugated and the brace having an outer end conforming to one of the corrugations.

5. An insulated receptacle, including an outer jacket and an inner container made of frangible material, the space within the outer jacket being hermetically sealed by a shock insulating element secured to said container.

6. An insulated receptacle, including an outer jacket, an inner container made of frangible material, and a yieldable diaphragm hermetically closing the space between said container and said jacket.

7. An insulated receptacle, including an outer jacket, an inner container made of frangible material, and a shock insulating diaphragm having a depression and hermetically closing the space between said jacket and said container.

8. An insulated receptacle, including an outer jacket, an inner container made of frangible material, and a shock insulating

diaphragm having a depression and made of yieldable material for closing the space between said jacket and said container.

9. An insulated receptacle, including an outer jacket, an inner container made of frangible material, a diaphragm secured to the jacket, and a collar surrounding the neck of the container and secured to said diaphragm.

10. An insulated receptacle, including an outer jacket, an inner container made of frangible material, a diaphragm secured to the jacket, and a metal collar sealed to and surrounding the neck of the container and soldered to said diaphragm by a lapped joint.

11. An insulated receptacle, including an outer jacket, an inner container made of frangible material, a diaphragm secured to the jacket, and a collar having an external grooved flange at its lower end, said flange being secured to said diaphragm by a lapped joint.

12. A heat insulated receptacle, including a vitreous container, a collar sealed to said container, a non-vitreous jacket, and a shock insulating diaphragm sealing the space between the collar and the jacket.

13. A heat insulated receptacle, including a vitreous container, a collar sealed to said container, a non-vitreous jacket, and a shock insulating diaphragm sealing the space between the collar and the jacket, said collar having means for engaging the lock of a cover.

14. A heat insulated receptacle, including an outer jacket, an inner frangible container and a shock insulating diaphragm hermetically sealing the space between said jacket and said container, the wall of the jacket being extended above the top of the container.

15. A heat insulated receptacle, including an outer jacket, an inner frangible container and a shock insulating diaphragm hermetically sealing the space between said jacket and said container, and disposed below the top of said jacket.

16. An insulated receptacle, including an outer non-vitreous jacket and an inner frangible container, said container having an open end and a yieldable metallic shock insulating diaphragm connecting the outer jacket and inner container adjacent its open end.

17. An insulated receptacle, including an outer jacket and an inner frangible container, said jacket and container being united by a shock insulating diaphragm, the junction of the container and diaphragm being positioned in a different plane than the junction of the jacket and diaphragm to thereby minimize exterior shocks to the container.

18. A heat insulated receptacle, including a vitreous container, a collar bonded to said container, an outer jacket terminating above the container, a shock insulating diaphragm sealing the space between the collar and the jacket, a cover for the container, and a cover to coöperate with the jacket to protect the diaphragm and the container.

19. A heat insulated receptacle, including a vitreous container, a collar bonded to said container, an outer jacket, a shock insulatng diaphragm, an insulating cover for said container, and means to lock said cover to the container.

20. An insulated receptacle, including an outer jacket and an inner container made of frangible material, the space within the outer jacket containing a metallic shock absorbing diaphragm.

21. A receptacle, including an outer jacket and an inner vitreous container, and non-resilient shock insulating means uniting said jacket and container.

22. A receptacle, including a protective jacket and a frangible container, united by non-resilient shock-insulating means, and having at the ends of its protective jacket, shock-receiving and resisting bands situated above the top and below the bottom of the container.

In testimony whereof, we affix our signatures.

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FRANK R. SUNDERLIN.

Witnesses:
L. V. D. BLAIR,
WALTER B. ENGLE.